



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,789	11/26/2003	Richard O. Glasson	CPI 3 Con	7239
26345	7590	08/03/2005	EXAMINER	
GIBBONS, DEL DEO, DOLAN, GRIFFINGER & VECCHIONE 1 RIVERFRONT PLAZA NEWARK, NJ 07102-5497			LOPEZ, FRANK D	
			ART UNIT	PAPER NUMBER
			3745	

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/722,789

Applicant(s)

GLASSON, RICHARD O.

Examiner

F. Daniel Lopez

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,7-9,12 and 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,7-9,12 and 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/19/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Response to Amendment

Applicant's arguments filed April 26, 2005, have been fully considered but they are not deemed to be persuasive.

Applicant's argues that there is no reason to combine Pullen with either Novak or Long, since there is no reason or suggestion in either Novak or Long to add the further step of converting rotational motion to linear motion, and then sensing the linear motion. Applicant is partially correct. The suggestion to combine Pullen with either Novak or Long comes from Pullen. Pullen teaches an improved rotary sensor, for sensing rotary motion in environments that have vibrations. Since the cylinders of Novak and Long are, or can be, in environments that have vibrations, the purpose of the improved sensor taught by Pullen is pertinent to the cylinders of Novak and Long.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

Claims 1, 4, 7-9, 12 and 13 are rejected under 35 U.S.C. § 103 as being unpatentable over Novak in view of Pullen. Novak discloses a sensor for a hydraulically actuated cylinder (12) having a piston (14), comprising a flexible connector (34) having first and second ends attached to the piston and to a rotating element (36, 38) of a converting element, respectively; wherein the converting element converts linear movement of the piston to a rotating movement of the rotating element; and a transducer (112) sensing rotary movement of the rotating element; a recoil mechanism (106) coupled to the rotating element; but does not disclose that the transducer includes a translating member in threaded communication with the rotating element, such that the rotating element converts linear movement of the piston to a linear movement of the translating member, with the transducer sensing the position of the translating member; with the translating member displaced along an axis of rotation of the rotating member and having an anti-rotational force exerted thereon; that the transducer is one of LVDT, DVRT, potentiometer, inductive transducer, capacitive transducer and a Hall-effect transducer; or that there is an anti-backlash force exerted along the longitudinal axis of the translating member.

Pullen teaches, for a transducer sensing rotary movement of a rotating element (24, 26); that the rotating element is in threaded communication with a translating member (40, 60) such that rotary movement of the rotating element is converted to a linear movement of the translating member, with the translating member displaced along an axis of rotation of the rotating member and having an anti-rotational force exerted thereon (by 60); and with an LVDT (62, e.g. column 2 line 46-48), or any convenient kind of linear displacement transducer (e.g. column 3 line 21-26) sensing the position of the translating member, for the purpose of providing a transducer which can be used in environments subject to continuous vibration (e.g. column 1 line 4-17).

Since the actuator of Novak can be used in environments with continuous vibration, and since the teaching of Pullen concerns position sensors used in environments with continuous vibration; the purpose disclosed by Pullen would have been recognized in the pertinent art of Novak. It would have been obvious at the time the invention was made to one having ordinary skill in the art to replace the transducer of Novak with a transducer which includes a translating member in threaded communication with the rotating element, such that rotary movement of the rotating element is converted to a linear movement of the translating member, with the translating member displaced along an axis of rotation of the rotating member; and with an LVDT, or any convenient kind of linear displacement transducer, sensing the position of the translating member, as taught by Pullen, for the purpose of providing a transducer which can be used in environments subject to continuous vibration.

Official notice is taken, for a linear to rotary device including a rotating element having screw threads driving a translating member, that an anti-backlash force is exerted along a longitudinal axis of the translating member, for the purpose of positioning the translating member at a same position, for the same position of the rotating element, no matter which direction the rotating element is rotated. It would have been obvious at the time the invention was made to one having ordinary skill in the art to exert an anti-backlash force along a longitudinal axis of the translating member of Nowak, for the purpose of positioning the translating member at a same position, for the

Art Unit: 3745

same position of the rotating element, no matter which direction the rotating element is rotated.

Claims 1, 4, 7-9, 12 and 13 are rejected under 35 U.S.C. § 103 as being unpatentable over Long in view of Pullen. Long discloses a sensor for a hydraulically actuated cylinder (17, 430') having a piston (19) and used in an environment (see fig 1) with continuous vibration, comprising a flexible connector (44, 417) having first and second ends attached to the piston and to a rotating element (e.g. 433) of a converting element, respectively; wherein the converting element converts linear movement of the movable element to a rotating movement of the rotating element; and a potentiometer (434) sensing rotary movement of the rotating element; and a recoil mechanism (433) coupled to the rotating element; but does not disclose that the transducer includes a translating member in threaded communication with the rotating element, such that the rotating element converts linear movement of the movable element to a linear movement of the translating member, with the transducer sensing the position of the translating member; with the translating member displaced along an axis of rotation of the rotating member and having an anti-rotational force exerted thereon; that the transducer is one of LVDT, DVRT, potentiometer, inductive transducer, capacitive transducer and a Hall-effect transducer; or that there is an anti-backlash force exerted along the longitudinal axis of the translating member.

Pullen teaches, for a transducer sensing rotary movement of a rotating element (24, 26); that the rotating element is in threaded communication with a translating member (40, 60) such that rotary movement of the rotating element is converted to a linear movement of the translating member, with the translating member displaced along an axis of rotation of the rotating member and having an anti-rotational force exerted thereon (by 60); and with an LVDT (62, e.g. column 2 line 46-48), or any convenient kind of linear displacement transducer (e.g. column 3 line 21-26) sensing the position of the translating member, for the purpose of providing a replacement transducer, for a potentiometer, which can be used in environments subject to continuous vibration (e.g. column 1 line 4-17).

Since the actuator of Long has a potentiometer used in an environment with continuous vibration, and since the teaching of Pullen concerns potentiometers used in environments with continuous vibration; the purpose disclosed by Pullen would have been recognized in the pertinent art of Long. It would have been obvious at the time the invention was made to one having ordinary skill in the art to replace the transducer of Long with a transducer which includes a translating member in threaded communication with the rotating element, such that rotary movement of the rotating element is converted to a linear movement of the translating member, with the translating member displaced along an axis of rotation of the rotating member; and with an LVDT, or any convenient kind of linear displacement transducer, sensing the position of the translating member, as taught by Pullen, for the purpose of providing a transducer which can be used in environments subject to continuous vibration.

Official notice is taken, for a linear to rotary device including a rotating element having screw threads driving a translating member, that an anti-backlash force is exerted along a longitudinal axis of the translating member, for the purpose of positioning the translating member at a same position, for the same position of the rotating element, no matter which direction the rotating element is rotated. It would have been obvious at the time the invention was made to one having ordinary skill in the art to exert an anti-backlash force along a longitudinal axis of the translating member of Long, for the purpose of positioning the translating member at a same position, for the same position of the rotating element, no matter which direction the rotating element is rotated.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

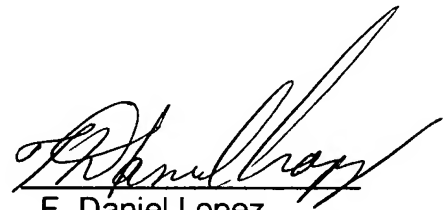
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 3745

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Lopez whose telephone number is 571- 272-4821. The examiner can normally be reached on Monday-Thursday from 6:15 AM -3:45 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Look, can be reached on 571-272-4820. The fax number for this group is 571-273-8300. Any inquiry of a general nature should be directed to the Help Desk, whose telephone number is 1-800-PTO-9199.

A handwritten signature in black ink, appearing to read 'F. Daniel Lopez', is written over a horizontal line.

F. Daniel Lopez
Primary Examiner
Art Unit 3745
August 01, 2005